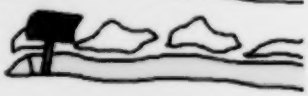
Let it snow, snow, snow



Column 409
by Teresa Earle

If you think you're shovelling more snow than usual, you may be right.

Last week, the Yukon weather office reported several record daily snowfalls across southern Yukon. In a three-day period, 60 cm of snow blanketed the Watson Lake area, 40 cm of snow accumulated in Atlin and 33 cm fell in Carcross.

"First we recorded the coldest temperatures since 1996, and then in tandem with B.C. we were hit by a Pacific frontal system," says Environment Canada's Bill Miller.

"The Vancouver area got rain, the Terrace-Smithers area got freezing rain, and the same storm gave the Yukon snow," he adds.

Hydrologist Ric Janowicz weighs a tube of snow during a snow survey in the Carmacks area.

(photo: Ric Janowicz, Environment Yukon)

Though it's still too early to determine seasonal trends, Yukon hydrologist Ric Janowicz confirms that measurements taken at Whitehorse International Airport show higher than normal snow depth for this time of winter.

"Our hydrology technician measured it today," says Janowicz, "and the measured snow water equivalent at the airport is 101 mm. That's quite high for this station."

"Each year we receive lots of inquiries asking, is the snowfall higher? Is it lower? Often it's normal -- but this year it is higher."

Seventy snow survey stations including five automated snow pillows are scattered around the territory. Most measure snow depth and the water content of the snow, and the snow pillow sites record the weight of the accumulated snow. Hydrologists are most interested in the water equivalent measurement because they use it in their flood forecasting.

A snow pillow is a mattress-like apparatus used to monitor snow water equivalent. The water and antifreeze-filled pillow is installed before snow season, and Janowicz explains that snow settles on the bladder and an automated data collector maintains

a continuous record of the snow weight.

"This recent snowfall was the result of a huge moist mass of air that originated over the Pacific," he says.

As Janowicz explains, higher moisture content contributes to the large flakes of snow that have been drifting across southern parts of the territory. In addition to the obvious strains on human transportation, heavier snows can have a significant impact on wildlife, vegetation and seasonal stream flows.

In recent weeks, Atlin RCMP have even placed advertisements in the newspaper urging people to steer clear of unsafe ice on Atlin Lake. Though the weight and insulating properties of snow are factors, warmer winter temperatures are having more of an impact on the formation of lake ice, says Janowicz.

"If you take out the couple of extreme lows we've had, it's been a pretty warm winter," he points out.

"Last summer was an interesting year due to the unusually warm temperatures and low rainfall. We had record high streamflow in glacial areas due to glacier melt and record low water in areas without glaciers due to the low rainfall amounts," he says.

While warm temperatures created the huge contrasts between record high and low water levels last year, an above normal snowpack could influence water flows in non-glacier-fed areas this summer.

Despite the snowier-than-usual conditions, the long-term trend across much of southern Yukon is a decline in snowfall. Winter precipitation in the Dawson area has remained stable over the last century, but decades of data indicate a steady decline in winter precipitation in places like Whitehorse and Burwash Landing.

Environment Yukon's water resources section publishes the Yukon Snow Survey Bulletin and Water Supply Forecast series each March, April and May. The series makes snowpack and streamflow data and forecasting available to agencies, industry, snow enthusiasts, the avalanche community, and anyone else who wants to be on the mailing list.

For more information about snow, contact Ric Janowicz at Yukon Environment's hydrology section at (867) 667-3223. Check Yukon weather conditions and forecasts on the Internet at www.weatheroffice.ec.gc.ca.

Environment Canada
Pacific and Yukon Region